

**RULE AND REGULATION NO. 47,  
“VALUATION OF LIFE INSURANCE POLICIES”**

## Table of Contents

- |            |  |
|------------|--|
| Section 1. | Purpose  |
| Section 2. | Authority  |
| Section 3. | Applicability  |
| Section 4. | Definitions  |
| Section 5. | General Calculation Requirements for Basic Reserves and Premium Deficiency Reserves  |
| Section 6. | Calculation of Minimum Valuation Standard for Policies with Guaranteed Nonlevel Gross Premiums or Guaranteed Nonlevel Benefits (Other Than Universal Life Policies)  |
| Section 7. | Calculation of Minimum Valuation Standard for Flexible Premium and Fixed Premium Universal Life Insurance Policies That Contain Provisions Resulting in the Ability of a Policyowner to Keep a Policy in Force Over a Secondary Guarantee Period |
| Section 8. | Effective Date   |
| Appendix.  |  |

## **Section 1. Purpose**

- A. The purpose of this regulation is to provide:
    - (1) Tables of select mortality factors and rules for their use;
    - (2) Rules concerning a minimum standard for the valuation of plans with nonlevel premiums or benefits; and
    - (3) Rules concerning a minimum standard for the valuation of plans with secondary guarantees.
  - B. The method for calculating basic reserves defined in this regulation will constitute the Commissioners' Reserve Valuation Method for policies to which this regulation is applicable.

## **Section 2. Authority**

This regulation is issued under the authority of Arkansas Code Annotated Sections 23-61-108, 23-66-201—214, 23-66-301 et seq., 23-79-109—110, 23-85-105, 23-74-122, 23-76-125, 25-15-202 et seq., and Public Law 101-508.

1       **Section 3.      Applicability**

2

3       This regulation shall apply to all life insurance policies, with or without nonforfeiture values, issued  
4       on or after the effective date of this regulation, subject to the following exceptions and conditions.

5

6       **A.      Exceptions**

7

- 8           (1)     This regulation shall not apply to any individual life insurance policy issued  
9       on or after the effective date of this regulation if the policy is issued in  
10      accordance with and as a result of the exercise of a reentry provision  
11      contained in the original life insurance policy of the same or greater face  
12      amount, issued before the effective date of this regulation, that guarantees  
13      the premium rates of the new policy. This regulation also shall not apply to  
14      subsequent policies issued as a result of the exercise of such a provision, or a  
15      derivation of the provision, in the new policy.
- 16
- 17           (2)     This regulation shall not apply to any universal life policy that meets all the  
18      following requirements:
- 19
- 20              (a)    Secondary guarantee period, if any, is five (5) years or less;
- 21
- 22              (b)    Specified premium for the secondary guarantee period is not less  
23      than the net level reserve premium for the secondary guarantee  
24      period based on the CSO valuation tables as defined in Section 4F  
25      and the applicable valuation interest rate; and
- 26
- 27              (c)    The initial surrender charge is not less than 100 percent of the first  
28      year annualized specified premium for the secondary guarantee  
29      period.
- 30
- 31           (3)     This regulation shall not apply to any variable life insurance policy that  
32      provides for life insurance, the amount or duration of which varies according  
33      to the investment experience of any separate account or accounts.
- 34
- 35           (4)     This regulation shall not apply to any variable universal life insurance policy  
36      that provides for life insurance, the amount or duration of which varies  
37      according to the investment experience of any separate account or accounts.
- 38
- 39           (5)     This regulation shall not apply to a group life insurance certificate unless the  
40      certificate provides for a stated or implied schedule of maximum gross  
41      premiums required in order to continue coverage in force for a period in  
42      excess of one year.

43

44       **B.      Conditions**

45

- (1) Calculation of the minimum valuation standard for policies with guaranteed nonlevel gross premiums or guaranteed nonlevel benefits (other than universal life policies), or both, shall be in accordance with the provisions of Section 6.
  - (2) Calculation of the minimum valuation standard for flexible premium and fixed premium universal life insurance policies, that contain provisions resulting in the ability of a policyholder to keep a policy in force over a secondary guarantee period shall be in accordance with the provisions of Section 7.

## Section 4. Definitions

For purposes of this regulation:

- A. “Basic reserves” means reserves calculated in accordance with Arkansas Code Annotated Sections 23-84-101 et seq.
  - B. “Contract segmentation method” means the method of dividing the period from issue to mandatory expiration of a policy into successive segments, with the length of each segment being defined as the period from the end of the prior segment (from policy inception, for the first segment) to the end of the latest policy year as determined below. All calculations are made using the 1980 CSO valuation tables, as defined in Subsection F of this section, (or any other valuation mortality table adopted by the National Association of Insurance Commissioners (NAIC) after the effective date of this regulation and promulgated by regulation by the commissioner for this purpose), and, if elected, the optional minimum mortality standard for deficiency reserves stipulated in Section 5B of this regulation.

The length of a particular contract segment shall be set equal to the minimum of the value  $t$  for which  $G_t$  is greater than  $R_t$  (if  $G_t$  never exceeds  $R_t$  the segment length is deemed to be the number of years from the beginning of the segment to the mandatory expiration date of the policy), where  $G_t$  and  $R_t$  are defined as follows:

$$G_t = \frac{GP_{x+k+t}}{GP_{x+k+t-1}}$$

where:

x = original issue age;

**k** = the number of years from the date of issue to the beginning of the segment;

$t = 1, 2, \dots$ ;  $t$  is reset to 1 at the beginning of each segment;

1                    $GP_{x+k+t-1} =$  Guaranteed gross premium per thousand of face amount for year  $t$  of  
2                   the segment, ignoring policy fees only if level for the premium  
3                   paying period of the policy.  
4

5

$$6 \quad R_t = \frac{q_{x+k+t}}{q_{x+k+t-1}}, \text{ However, } R_t \text{ may be increased or}$$

7                   decreased by one percent in any  
8                   policy year, at the company's  
9                   option, but  $R_t$  shall not be less than one;

10                  where:

11                  x, k and t are as defined above, and

12                   $q_{x+k+t-1} =$  valuation mortality rate for deficiency reserves in  
13                  policy year  $k+t$  but using the mortality of Section  
14                  5B(2) if Section 5B(3) is elected for deficiency  
15                  reserves.

16                  However, if  $GP_{x+k+t}$  is greater than 0 and  $GP_{x+k+t-1}$  is equal to 0,  $G_t$  shall be deemed  
17                  to be 1000. If  $GP_{x+k+t}$  and  $GP_{x+k+t-1}$  are both equal to 0,  $G_t$  shall be deemed to be 0.

- 18
- 19                  C. "Deficiency reserves" means the excess, if greater than zero, of
- 20
- 21                  (1) Minimum reserves calculated in accordance with Arkansas Code Annotated  
22                  Sections 23-84-101 et seq. over
- 23
- 24                  (2) Basic reserves.
- 25
- 26                  D. "Guaranteed gross premiums" means the premiums under a policy of life insurance  
27                  that are guaranteed and determined at issue.
- 28
- 29                  E. "Maximum valuation interest rates" means the interest rates defined in Arkansas  
30                  Code Annotated Sections 23-84-101 et seq. (Computation of Minimum Standard by  
31                  Calendar Year of Issue) that are to be used in determining the minimum standard for  
32                  the valuation of life insurance policies.
- 33
- 34                  F. "1980 CSO valuation tables" means the Commissioners' 1980 Standard Ordinary  
35                  Mortality Table (1980 CSO Table) without ten-year selection factors, incorporated  
36                  into the 1980 amendments to the NAIC Standard Valuation Law, and variations of  
37                  the 1980 CSO Table approved by the NAIC, such as the smoker and nonsmoker  
38                  versions approved in December 1983.
- 39
- 40                  G. "Scheduled gross premium" means the smallest illustrated gross premium at issue  
41                  for other than universal life insurance policies. For universal life insurance policies,

1 scheduled gross premium means the smallest specified premium described in  
2 Section 7A(3), if any, or else the minimum premium described in Section 7A(4).

- 3
- 4 H. (1) “Segmented reserves” means reserves, calculated using segments produced  
5 by the contract segmentation method, equal to the present value of all future  
6 guaranteed benefits less the present value of all future net premiums to the  
7 mandatory expiration of a policy, where the net premiums within each  
8 segment are a uniform percentage of the respective guaranteed gross  
9 premiums within the segment. The uniform percentage for each segment is  
10 such that, at the beginning of the segment, the present value of the net  
11 premiums within the segment equals:
- 12
- 13 (a) The present value of the death benefits within the segment, plus
- 14
- 15 (b) The present value of any unusual guaranteed cash value (see Section  
16 6D) occurring at the end of the segment, less
- 17
- 18 (c) Any unusual guaranteed cash value occurring at the start of the  
19 segment, plus
- 20
- 21 (d) For the first segment only, the excess of the Item (i) over Item (ii), as  
22 follows:
- 23
- 24 (i) A net level annual premium equal to the present value, at the  
25 date of issue, of the benefits provided for in the first segment  
26 after the first policy year, divided by the present value, at the  
27 date of issue, of an annuity of one per year payable on the  
28 first and each subsequent anniversary within the first segment  
29 on which a premium falls due. However, the net level annual  
30 premium shall not exceed the net level annual premium on  
31 the nineteen-year premium whole life plan of insurance of the  
32 same renewal year equivalent level amount at an age one  
33 year higher than the age at issue of the policy.
- 34
- 35 (ii) A net one year term premium for the benefits provided for in  
36 the first policy year.
- 37
- 38 (2) The length of each segment is determined by the “contract segmentation  
39 method,” as defined in this section.
- 40
- 41 (3) The interest rates used in the present value calculations for any policy may  
42 not exceed the maximum valuation interest rate, determined with a guarantee  
43 duration equal to the sum of the lengths of all segments of the policy.
- 44

- I. (4) For both basic reserves and deficiency reserves computed by the segmented method, present values shall include future benefits and net premiums in the current segment and in all subsequent segments.

J. “Tabular cost of insurance” means the net single premium at the beginning of a policy year for one-year term insurance in the amount of the guaranteed death benefit in that policy year.

J. “Ten-year select factors” means the select factors adopted with the 1980 amendments to the NAIC Standard Valuation Law.

K. (1) “Unitary reserves” means the present value of all future guaranteed benefits less the present value of all future modified net premiums, where:

  - (a) Guaranteed benefits and modified net premiums are considered to the mandatory expiration of the policy; and
  - (b) Modified net premiums are a uniform percentage of the respective guaranteed gross premiums, where the uniform percentage is such that, at issue, the present value of the net premiums equals the present value of all death benefits and pure endowments, plus the excess of Item (i) over Item (ii), as follows:
    - (i) A net level annual premium equal to the present value, at the date of issue, of the benefits provided for after the first policy year, divided by the present value, at the date of issue, of an annuity of one per year payable on the first and each subsequent anniversary of the policy on which a premium falls due. However, the net level annual premium shall not exceed the net level annual premium on the nineteen-year premium whole life plan of insurance of the same renewal year equivalent level amount at an age one year higher than the age at issue of the policy.
    - (ii) A net one year term premium for the benefits provided for in the first policy year.

(2) The interest rates used in the present value calculations for any policy may not exceed the maximum valuation interest rate, determined with a guarantee duration equal to the length from issue to the mandatory expiration of the policy.

L. “Universal life insurance policy” means any individual life insurance policy under the provisions of which separately identified interest credits (other than in connection with dividend accumulations, premium deposit funds, or other supplementary accounts) and mortality or expense charges are made to the policy.

1  
2     **Section 5. General Calculation Requirements for Basic Reserves and Premium Deficiency**  
3     **Reserves**

4  
5     A. At the election of the company for any one or more specified plans of life insurance,  
6         the minimum mortality standard for basic reserves may be calculated using the 1980  
7         CSO valuation tables with select mortality factors (or any other valuation mortality  
8         table adopted by the NAIC after the effective date of this regulation and  
9         promulgated by regulation by the commissioner for this purpose). If select mortality  
10       factors are elected, they may be:

- 11  
12       (1) The ten-year select mortality factors incorporated into the 1980 amendments  
13           to the NAIC Standard Valuation Law;  
14  
15       (2) The select mortality factors in the Appendix; or  
16  
17       (3) Any other table of select mortality factors adopted by the NAIC after the  
18           effective date of this regulation and promulgated by regulation by the  
19           commissioner for the purpose of calculating basic reserves.

20  
21     B. Deficiency reserves, if any, are calculated for each policy as the excess, if greater  
22       than zero, of the quantity A over the basic reserve. The quantity A is obtained by  
23       recalculating the basic reserve for the policy using guaranteed gross premiums  
24       instead of net premiums when the guaranteed gross premiums are less than the  
25       corresponding net premiums. At the election of the company for any one or more  
26       specified plans of insurance, the quantity A and the corresponding net premiums  
27       used in the determination of quantity A may be based upon the 1980 CSO valuation  
28       tables with select mortality factors (or any other valuation mortality table adopted by  
29       the NAIC after the effective date of this regulation and promulgated by regulation by  
30       the commissioner). If select mortality factors are elected, they may be:

- 31  
32       (1) The ten-year select mortality factors incorporated into the 1980 amendments  
33           to the NAIC Standard Valuation Law;  
34  
35       (2) The select mortality factors in the Appendix of this regulation;  
36  
37       (3) For durations in the first segment, X percent of the select mortality factors in  
38           the Appendix , subject to the following:  
39  
40           (a) X may vary by policy year, policy form, underwriting classification,  
41              issue age, or any other policy factor expected to affect mortality  
42              experience;  
43  
44           (b) X shall not be less than twenty percent (20%);  
45  
46           (c) X shall not decrease in any successive policy years;

- 1
- 2 (d) X is such that, when using the valuation interest rate used for basic  
3 reserves, Item (i) is greater than or equal to Item (ii);
- 4
- 5 (i) The actuarial present value of future death benefits,  
6 calculated using the mortality rates resulting from the  
7 application of X;
- 8
- 9 (ii) The actuarial present value of future death benefits  
10 calculated using anticipated mortality experience without  
11 recognition of mortality improvement beyond the valuation  
12 date;
- 13
- 14 (e) X is such that the mortality rates resulting from the application of X  
15 are at least as great as the anticipated mortality experience, without  
16 recognition of mortality improvement beyond the valuation date, in  
17 each of the first five (5) years after the valuation date;
- 18
- 19 (f) The appointed actuary shall increase X at any valuation date where it  
20 is necessary to continue to meet all the requirements of Subsection  
21 B(3);
- 22
- 23 (g) The appointed actuary may decrease X at any valuation date as long  
24 as X does not decrease in any successive policy years and as long as  
25 it continues to meet all the requirements of Subsection B(3); and
- 26
- 27 (h) The appointed actuary shall specifically take into account the  
28 adverse effect on expected mortality and lapsation of any  
29 anticipated or actual increase in gross premiums.
- 30
- 31 (i) If X is less than 100 percent at any duration for any policy, the  
32 following requirements shall be met:
- 33
- 34 (i) The appointed actuary shall annually prepare an actuarial  
35 opinion and memorandum for the company in conformance  
36 with the requirements of Arkansas Insurance Department  
37 Rule and Regulation 64 and any other applicable provision;  
38 and
- 39
- 40 (ii) The appointed actuary shall annually opine for all  
41 policies subject to this regulation as to whether the  
42 mortality rates resulting from the application of X meet the  
43 requirements of Subsection B(3). This opinion shall be  
44 supported by an actuarial report, subject to appropriate  
45 Actuarial Standards of Practice promulgated by the  
46 Actuarial Standards Board of the American Academy of

Actuaries. The X factors shall reflect anticipated future mortality, without recognition of mortality improvement beyond the valuation date, taking into account relevant emerging experience.

- (4) Any other table of select mortality factors adopted by the NAIC after the effective date of this regulation and promulgated by regulation by the commissioner for the purpose of calculating deficiency reserves.

C. This subsection applies to both basic reserves and deficiency reserves. Any set of select mortality factors may be used only for the first segment. However, if the first segment is less than ten (10) years, the appropriate ten-year select mortality factors incorporated into the 1980 amendments to the NAIC Standard Valuation Law may be used thereafter through the tenth policy year from the date of issue.

D. In determining basic reserves or deficiency reserves, guaranteed gross premiums without policy fees may be used where the calculation involves the guaranteed gross premium but only if the policy fee is a level dollar amount after the first policy year. In determining deficiency reserves, policy fees may be included in guaranteed gross premiums, even if not included in the actual calculation of basic reserves.

E. Reserves for policies that have changes to guaranteed gross premiums, guaranteed benefits, guaranteed charges, or guaranteed credits that are unilaterally made by the insurer after issue and that are effective for more than one year after the date of the change shall be the greatest of the following: (1) reserves calculated ignoring the guaranteee, (2) reserves assuming the guarantee was made at issue, and (3) reserves assuming that the policy was issued on the date of the guaranteee.

F. The commissioner may require that the company document the extent of the adequacy of reserves for specified blocks, including but not limited to policies issued prior to the effective date of this regulation. This documentation may include a demonstration of the extent to which aggregation with other non-specified blocks of business is relied upon in the formation of the appointed actuary opinion pursuant to and consistent with the requirements of Arkansas Insurance Department Rule and Regulation 64 and any other applicable provision.

## **Section 6. Calculation of Minimum Valuation Standard for Policies with Guaranteed Nonlevel Gross Premiums or Guaranteed Nonlevel Benefits (Other than Universal Life Policies)**

### A. Basic Reserves

Basic reserves shall be calculated as the greater of the segmented reserves and the unitary reserves. Both the segmented reserves and the unitary reserves for any policy shall use the same valuation mortality table and selection factors. At the option of

1 the insurer, in calculating segmented reserves and net premiums, either of the  
2 adjustments described in Paragraph (1) or (2) below may be made:  
3

- 4 (1) Treat the unitary reserve, if greater than zero, applicable at the end of each  
5 segment as a pure endowment and subtract the unitary reserve, if greater  
6 than zero, applicable at the beginning of each segment from the present  
7 value of guaranteed life insurance and endowment benefits for each  
8 segment.  
9
- 10 (2) Treat the guaranteed cash surrender value, if greater than zero, applicable at  
11 the end of each segment as a pure endowment; and subtract the guaranteed  
12 cash surrender value, if greater than zero, applicable at the beginning of each  
13 segment from the present value of guaranteed life insurance and endowment  
14 benefits for each segment.

15 B. Deficiency Reserves  
16

- 17 (1) The deficiency reserve at any duration shall be calculated:  
18
- 19 (a) On a unitary basis if the corresponding basic reserve determined by  
20 Subsection A is unitary;  
21
- 22 (b) On a segmented basis if the corresponding basic reserve determined  
23 by Subsection A is segmented; or  
24
- 25 (c) On the segmented basis if the corresponding basic reserve  
26 determined by Subsection A is equal to both the segmented reserve  
27 and the unitary reserve.  
28
- 29 (2) This subsection shall apply to any policy for which the guaranteed gross  
30 premium at any duration is less than the corresponding modified net  
31 premium calculated by the method used in determining the basic reserves,  
32 but using the minimum valuation standards of mortality (specified in Section  
33 5B) and rate of interest.  
34
- 35 (3) Deficiency reserves, if any, shall be calculated for each policy as the excess  
36 if greater than zero, for the current and all remaining periods, of the quantity  
37 A over the basic reserve, where A is obtained as indicated in Section 5B.  
38
- 39 (4) For deficiency reserves determined on a segmented basis, the quantity A is  
40 determined using segment lengths equal to those determined for segmented  
41 basic reserves.  
42

1           C. Minimum Value

2

3           Basic reserves may not be less than the tabular cost of insurance for the balance of  
4           the policy year, if mean reserves are used. Basic reserves may not be less than the  
5           tabular cost of insurance for the balance of the current modal period or to the  
6           paid-to-date, if later, but not beyond the next policy anniversary, if mid-terminal  
7           reserves are used. The tabular cost of insurance shall use the same valuation  
8           mortality table and interest rates as that used for the calculation of the segmented  
9           reserves. However, if select mortality factors are used, they shall be the ten-year  
10          select factors incorporated into the 1980 amendments of the NAIC Standard  
11          Valuation Law. In no case may total reserves (including basic reserves, deficiency  
12          reserves and any reserves held for supplemental benefits that would expire upon  
13          contract termination) be less than the amount that the policyowner would receive  
14          (including the cash surrender value of the supplemental benefits, if any, referred to  
15          above), exclusive of any deduction for policy loans, upon termination of the policy.

16

17           D. Unusual Pattern of Guaranteed Cash Surrender Values

18

- 19           (1) For any policy with an unusual pattern of guaranteed cash surrender values,  
20           the reserves actually held prior to the first unusual guaranteed cash surrender  
21           value shall not be less than the reserves calculated by treating the first  
22           unusual guaranteed cash surrender value as a pure endowment and treating  
23           the policy as an  $n$  year policy providing term insurance plus a pure  
24           endowment equal to the unusual cash surrender value, where  $n$  is the number  
25           of years from the date of issue to the date the unusual cash surrender value is  
26           scheduled.
- 27
- 28           (2) The reserves actually held subsequent to any unusual guaranteed cash  
29           surrender value shall not be less than the reserves calculated by treating the  
30           policy as an  $n$  year policy providing term insurance plus a pure endowment  
31           equal to the next unusual guaranteed cash surrender value, and treating any  
32           unusual guaranteed cash surrender value at the end of the prior segment as a  
33           net single premium, where
- 34
- 35           (a)  $n$  is the number of years from the date of the last unusual guaranteed  
36           cash surrender value prior to the valuation date to the earlier of:
- 37
- 38               (i) The date of the next unusual guaranteed cash surrender value,  
39               if any, that is scheduled after the valuation date; or
- 40
- 41               (ii) The mandatory expiration date of the policy; and
- 42
- 43           (b) The net premium for a given year during the  $n$  year period is equal to  
44           the product of the net to gross ratio and the respective gross  
45           premium; and
- 46

- (c) The net to gross ratio is equal to Item (i) divided by Item (ii) as follows:

  - (i) The present value, at the beginning of the  $n$  year period, of death benefits payable during the  $n$  year period plus the present value, at the beginning of the  $n$  year period, of the next unusual guaranteed cash surrender value, if any, minus the amount of the last unusual guaranteed cash surrender value, if any, scheduled at the beginning of the  $n$  year period.
  - (ii) The present value, at the beginning of the  $n$  year period, of the scheduled gross premiums payable during the  $n$  year period.

(3) For purposes of this subsection, a policy is considered to have an unusual pattern of guaranteed cash surrender values if any future guaranteed cash surrender value exceeds the prior year's guaranteed cash surrender value by more than the sum of:

  - (a) One hundred ten percent (110%) of the scheduled gross premium for that year;
  - (b) One hundred ten percent (110%) of one year's accrued interest on the sum of the prior year's guaranteed cash surrender value and the scheduled gross premium using the nonforfeiture interest rate used for calculating policy guaranteed cash surrender values; and
  - (c) Five percent (5%) of the first policy year surrender charge, if any.

E. Optional Exemption for Yearly Renewable Term Reinsurance. At the option of the company, the following approach for reserves on YRT reinsurance may be used:

- (1) Calculate the valuation net premium for each future policy year as the tabular cost of insurance for that future year.
  - (2) Basic reserves shall never be less than the tabular cost of insurance for the appropriate period, as defined in Subsection C.
  - (3) Deficiency reserves.
    - (a) For each policy year, calculate the excess, if greater than zero, of the valuation net premium over the respective maximum guaranteed gross premium.

- (b) Deficiency reserves shall never be less than the sum of the present values, at the date of valuation, of the excesses determined in accordance with Subparagraph (a) above.
  - (4) For purposes of this subsection, the calculations use the maximum valuation interest rate and the 1980 CSO mortality tables with or without ten-year select mortality factors, or any other table adopted after the effective date of this regulation by the NAIC and promulgated by regulation by the commissioner for this purpose.
  - (5) A reinsurance agreement shall be considered YRT reinsurance for purposes of this subsection if only the mortality risk is reinsured.
  - (6) If the assuming company chooses this optional exemption, the ceding company's reinsurance reserve credit shall be limited to the amount of reserve held by the assuming company for the affected policies.

Optional Exemption for Attained-Age-Based Yearly Renewable Term Life Insurance Policies.

At the option of the company, the following approach for reserves for attained-age-based YRT life insurance policies may be used:

  - (1) Calculate the valuation net premium for each future policy year as the tabular cost of insurance for that future year.
  - (2) Basic reserves shall never be less than the tabular cost of insurance for the appropriate period, as defined in Subsection 6C.
  - (3) Deficiency reserves.
    - (a) For each policy year, calculate the excess, if greater than zero, of the valuation net premium over the respective maximum guaranteed gross premium.
    - (b) Deficiency reserves shall never be less than the sum of the present values, at the date of valuation, of the excesses determined in accordance with Subparagraph (a) above.
  - (4) For purposes of this subsection, the calculations use the maximum valuation interest rate and the 1980 CSO valuation tables with or without ten-year select mortality factors, or any other table adopted after the effective date of this regulation by the NAIC and promulgated by regulation by the commissioner for this purpose.

- (5) A policy shall be considered an attained-age-based YRT life insurance policy for purposes of this subsection if:

  - (a) The premium rates (on both the initial current premium scale and the guaranteed maximum premium scale) are based upon the attained age of the insured such that the rate for any given policy at a given attained age of the insured is independent of the year the policy was issued; and
  - (b) The premium rates (on both the initial current premium scale and the guaranteed maximum premium scale) are the same as the premium rates for policies covering all insureds of the same sex, risk class, plan of insurance and attained age.

(6) For policies that become attained-age-based YRT policies after an initial period of coverage, the approach of this subsection may be used after the initial period if:

  - (a) The initial period is constant for all insureds of the same sex, risk class and plan of insurance; or
  - (b) The initial period runs to a common attained age for all insureds of the same sex, risk class and plan of insurance; and
  - (c) After the initial period of coverage, the policy meets the conditions of Paragraph (5) above.

(7) If this election is made, this approach shall be applied in determining reserves for all attained-age-based YRT life insurance policies issued on or after the effective date of this regulation.

G. Exemption from Unitary Reserves for Certain  $n$ -Year Renewable Term Life Insurance Policies.

Unitary basic reserves and unitary deficiency reserves need not be calculated for a policy if the following conditions are met:

- (1) The policy consists of a series of  $n$ -year periods, including the first period and all renewal periods, where  $n$  is the same for each period, except that for the final renewal period,  $n$  may be truncated or extended to reach the expiry age, provided that this final renewal period is less than 10 years and less than twice the size of the earlier  $n$ -year periods, and for each period, the premium rates on both the initial current premium scale and the guaranteed maximum premium scale are level;

- (2) The guaranteed gross premiums in all  $n$ -year periods are not less than the corresponding net premiums based upon the 1980 CSO Table with or without the ten-year select mortality factors; and
  - (3) There are no cash surrender values in any policy year.

#### H. Exemption from Unitary Reserves for Certain Juvenile Policies

Unitary basic reserves and unitary deficiency reserves need not be calculated for a policy if the following conditions are met, based upon the initial current premium scale at issue:

- (1) At issue, the insured is age twenty-four (24) or younger;
  - (2) Until the insured reaches the end of the juvenile period, which shall occur at or before age twenty-five (25), the gross premiums and death benefits are level, and there are no cash surrender values; and
  - (3) After the end of the juvenile period, gross premiums are level for the remainder of the premium paying period, and death benefits are level for the remainder of the life of the policy.

## **Section 7. Calculation of Minimum Valuation Standard for Flexible Premium and Fixed Premium Universal Life Insurance Policies That Contain Provisions Resulting in the Ability of a Policyowner to Keep a Policy in Force Over a Secondary Guarantee Period**

#### A. General

- (1) Policies with a secondary guarantee include:

  - (a) A policy with a guarantee that the policy will remain in force at the original schedule of benefits, subject only to the payment of specified premiums;
  - (b) A policy in which the minimum premium at any duration is less than the corresponding one year valuation premium, calculated using the maximum valuation interest rate and the 1980 CSO valuation tables with or without ten-year select mortality factors, or any other table adopted after the effective date of this regulation by the NAIC and promulgated by regulation by the commissioner for this purpose; or
  - (c) A policy with any combination of Subparagraph (a) and (b).

(2) A secondary guarantee period is the period for which the policy is guaranteed to remain in force subject only to a secondary guarantee. When a

1 policy contains more than one secondary guarantee, the minimum reserve  
2 shall be the greatest of the respective minimum reserves at that valuation  
3 date of each unexpired secondary guarantee, ignoring all other secondary  
4 guarantees. Secondary guarantees that are unilaterally changed by the  
5 insurer after issue shall be considered to have been made at issue. Reserves  
6 described in Subsections B and C below shall be recalculated from issue to  
7 reflect these changes.

- 8
- 9 (3) Specified premiums mean the premiums specified in the policy, the payment  
10 of which guarantees that the policy will remain in force at the original  
11 schedule of benefits, but which otherwise would be insufficient to keep the  
12 policy in force in the absence of the guarantee if maximum mortality and  
13 expense charges and minimum interest credits were made and any applicable  
14 surrender charges were assessed.
- 15
- 16 (4) For purposes of this section, the minimum premium for any policy year is  
17 the premium that, when paid into a policy with a zero account value at the  
18 beginning of the policy year, produces a zero account value at the end of the  
19 policy year. The minimum premium calculation shall use the policy cost  
20 factors (including mortality charges, loads and expense charges) and the  
21 interest crediting rate, which are all guaranteed at issue.
- 22
- 23 (5) The one-year valuation premium means the net one-year premium based  
24 upon the original schedule of benefits for a given policy year. The one-year  
25 valuation premiums for all policy years are calculated at issue. The select  
26 mortality factors defined in Section 5B(2), (3), and (4) may not be used to  
27 calculate the one-year valuation premiums.
- 28
- 29 (6) The one-year valuation premium should reflect the frequency of fund  
30 processing, as well as the distribution of deaths assumption employed in the  
31 calculation of the monthly mortality charges to the fund.
- 32

33 B. Basic Reserves for the Secondary Guarantees

34

35 Basic reserves for the secondary guarantees shall be the segmented reserves for the  
36 secondary guarantee period. In calculating the segments and the segmented  
37 reserves, the gross premiums shall be set equal to the specified premiums, if any, or  
38 otherwise to the minimum premiums, that keep the policy in force and the segments  
39 will be determined according to the contract segmentation method as defined in  
40 Section 4B.

41 C. Deficiency Reserves for the Secondary Guarantees

42

43 Deficiency reserves, if any, for the secondary guarantees shall be calculated for the  
44 secondary guarantee period in the same manner as described in Section 6B with

1                   gross premiums set equal to the specified premiums, if any, or otherwise to the  
2                   minimum premiums that keep the policy in force.

3

4                  D. Minimum Reserves

5

6                   The minimum reserves during the secondary guarantee period are the greater of:

7

- 8                  (1) The basic reserves for the secondary guarantee plus the deficiency reserve, if  
9                   any, for the secondary guarantees; or
- 10
- 11                 (2) The minimum reserves required by other rules or regulations governing  
12                   universal life plans.

13

14                 **Section 8. Effective Date**

15

16                 This regulation shall become effective June 25, 2001.

17

18

19

---

20                 MIKE PICKENS  
21                 INSURANCE COMMISSIONER  
22                 STATE OF ARKANSAS

23

24

25

---

26

27                 DATE

1  
2 **Appendix**  
3

4 **SELECT MORTALITY FACTORS**  
5

6 This appendix contains tables of select mortality factors that are the bases to which the respective  
7 percentage of Section 5A(2), 5B(2) and 5B(3) are applied.  
8

9 The six tables of select mortality factors contained herein include: (1) male aggregate, (2) male  
10 nonsmoker, (3) male smoker, (4) female aggregate, (5) female nonsmoker, and (6) female smoker.  
11

12 These tables apply to both age last birthday and age nearest birthday mortality tables.  
13

14 For sex-blended mortality tables, compute select mortality factors in the same proportion as the  
15 underlying mortality. For example, for the 1980 CSO-B Table, the calculated select mortality  
16 factors are eighty percent (80%) of the appropriate male table in this Appendix, plus twenty percent  
17 (20%) of the appropriate female table in this Appendix.  
18

## 1 Appendix

2  
3  
4 SELECT MORTALITY FACTORS

Issue	Male, Aggregate																			
	Duration																			
Age	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
<b>0-15</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
<b>16</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
<b>17</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
<b>18</b>	96	98	98	99	99	100	100	90	92	92	92	92	93	93	96	97	98	98	99	
<b>19</b>	83	84	84	87	87	87	79	79	79	81	81	82	82	82	85	88	91	94	97	
<b>20</b>	69	71	71	74	74	69	69	67	69	70	71	71	71	71	74	79	84	90	95	
<b>21</b>	66	68	69	71	66	66	67	66	67	70	70	70	70	71	71	77	83	88	94	
<b>22</b>	65	66	66	63	63	64	64	64	65	68	68	68	69	71	71	77	83	88	94	
<b>23</b>	62	63	59	60	62	62	63	63	64	65	65	67	67	69	70	76	82	88	94	
<b>24</b>	60	56	56	59	59	60	61	61	61	64	64	64	66	67	70	76	82	88	94	
<b>25</b>	52	53	55	56	58	58	60	60	60	63	62	63	64	67	69	75	81	88	94	
<b>26</b>	51	52	55	56	58	58	57	61	61	62	63	64	66	69	66	73	80	86	93	
<b>27</b>	51	52	55	57	58	60	61	61	60	63	63	64	67	66	67	74	80	87	93	
<b>28</b>	49	51	56	58	60	60	61	62	62	63	64	66	65	66	68	74	81	87	94	
<b>29</b>	49	51	56	58	60	61	62	62	62	64	64	62	66	67	70	76	82	88	94	
<b>30</b>	49	50	56	58	60	60	62	63	63	64	62	63	67	68	71	77	83	88	94	
<b>31</b>	47	50	56	58	60	62	63	64	64	62	63	66	68	70	72	78	83	89	94	
<b>32</b>	46	49	56	59	60	62	63	66	62	63	66	67	70	72	73	78	84	89	95	
<b>33</b>	43	49	56	59	62	63	64	62	65	66	67	70	72	73	75	80	85	90	95	
<b>34</b>	42	47	56	60	62	63	61	63	66	67	70	71	73	75	76	81	86	90	95	
<b>35</b>	40	47	56	60	63	61	62	65	67	68	71	73	74	76	76	81	86	90	95	
<b>36</b>	38	42	56	60	59	61	63	65	67	68	70	72	74	76	77	82	86	91	95	
<b>37</b>	38	45	56	57	61	62	63	65	67	68	70	72	74	76	76	81	86	90	95	
<b>38</b>	37	44	53	58	61	62	65	66	67	69	69	73	75	76	77	82	86	91	95	
<b>39</b>	37	41	53	58	62	63	65	65	66	68	69	72	74	76	76	81	86	90	95	
<b>40</b>	34	40	53	58	62	63	65	65	66	68	68	71	75	76	77	82	86	91	95	

**Male, Aggregate**

**Issue**

**Duration**

<b>Age</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20+</b>
<b>41</b>	34	41	53	58	62	63	65	64	64	66	68	70	74	76	77	82	86	91	95	100
<b>42</b>	34	43	53	58	61	62	63	63	63	64	66	69	72	75	77	82	86	91	95	100
<b>43</b>	34	43	54	59	60	61	63	62	62	64	66	67	72	74	77	82	86	91	95	100
<b>44</b>	34	44	54	58	59	60	61	60	61	62	64	67	71	74	77	82	86	91	95	100
<b>45</b>	34	45	53	58	59	60	60	60	59	60	63	66	71	74	77	82	86	91	95	100
<b>46</b>	31	43	52	56	57	58	59	59	59	60	63	67	71	74	75	80	85	90	95	100
<b>47</b>	32	42	50	53	55	56	57	58	59	60	65	68	71	74	75	80	85	90	95	100
<b>48</b>	32	41	47	52	54	56	57	57	57	61	65	68	72	73	74	79	84	90	95	100
<b>49</b>	30	40	46	49	52	54	55	56	57	61	66	69	72	73	74	79	84	90	95	100
<b>50</b>	30	38	44	47	51	53	54	56	57	61	66	71	72	73	75	80	85	90	95	100
<b>51</b>	28	37	42	46	49	53	54	56	57	61	66	71	72	73	75	80	85	90	95	100
<b>52</b>	28	35	41	45	49	51	54	56	57	61	66	71	72	74	75	80	85	90	100	100
<b>53</b>	27	35	39	44	48	51	53	55	57	61	67	71	74	75	76	81	86	100	100	100
<b>54</b>	27	33	38	44	48	50	53	55	57	61	67	72	74	75	76	81	100	100	100	100
<b>55</b>	25	32	37	43	47	50	53	55	57	61	68	72	74	75	78	100	100	100	100	100
<b>56</b>	25	32	37	43	47	49	51	54	56	61	67	70	73	74	100	100	100	100	100	100
<b>57</b>	24	31	38	43	47	49	51	54	56	59	66	69	72	100	100	100	100	100	100	100
<b>58</b>	24	31	38	43	48	48	50	53	56	59	64	67	100	100	100	100	100	100	100	100
<b>59</b>	23	30	39	43	48	48	51	53	55	58	63	100	100	100	100	100	100	100	100	100
<b>60</b>	23	30	39	43	48	47	50	52	53	57	100	100	100	100	100	100	100	100	100	100
<b>61</b>	23	30	39	43	49	49	50	52	53	75	100	100	100	100	100	100	100	100	100	100
<b>62</b>	23	30	39	44	49	49	51	52	75	75	100	100	100	100	100	100	100	100	100	100
<b>63</b>	22	30	39	45	50	50	52	75	75	75	100	100	100	100	100	100	100	100	100	100
<b>64</b>	22	30	39	45	50	51	75	75	75	75	100	100	100	100	100	100	100	100	100	100
<b>65</b>	22	30	39	45	50	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
<b>66</b>	22	30	39	45	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
<b>67</b>	22	30	39	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
<b>68</b>	23	32	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
<b>69</b>	23	52	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
<b>70</b>	48	52	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100

**Male, Aggregate****Issue****Duration**

<b>Age</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20+</b>
<b>71</b>	48	52	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
<b>72</b>	48	52	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
<b>73</b>	48	52	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
<b>74</b>	48	52	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
<b>75</b>	48	52	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
<b>76</b>	48	52	55	60	60	65	70	70	70	100	100	100	100	100	100	100	100	100	100	100
<b>77</b>	48	52	55	60	60	65	70	70	100	100	100	100	100	100	100	100	100	100	100	100
<b>78</b>	48	52	55	60	60	65	70	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>79</b>	48	52	55	60	60	65	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>80</b>	48	52	55	60	60	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>81</b>	48	52	55	60	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>82</b>	48	52	55	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>83</b>	48	52	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>84</b>	48	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>85+</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

## Male, Non-Smoker

## Issue

Age	Duration										Male, Non-Smoker								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
<b>0-15</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>16</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>17</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>18</b>	93	95	96	98	99	100	100	90	92	92	92	92	95	95	96	97	98	98	99
<b>19</b>	80	81	83	86	87	87	79	79	79	81	81	82	83	83	86	89	92	94	97
<b>20</b>	65	68	69	72	74	69	69	67	69	70	71	71	72	72	75	80	85	90	95
<b>21</b>	63	66	68	71	66	66	67	66	67	70	70	70	71	71	73	78	84	89	95
<b>22</b>	62	65	66	62	63	64	64	64	67	68	68	68	70	70	73	78	84	89	95
<b>23</b>	60	62	58	60	62	62	63	63	64	67	68	68	67	69	71	77	83	88	94
<b>24</b>	59	55	56	58	59	60	61	61	63	65	67	66	66	69	71	77	83	88	94
<b>25</b>	52	53	55	56	58	58	60	60	61	64	64	64	64	67	70	76	82	88	94
<b>26</b>	51	53	55	56	58	60	61	61	61	63	64	64	66	69	67	74	80	87	93
<b>27</b>	51	52	55	58	60	60	61	61	62	63	64	66	67	66	67	74	80	87	93
<b>28</b>	49	52	57	58	60	61	63	62	62	64	66	66	63	66	68	74	81	87	94
<b>29</b>	49	51	57	60	61	61	62	62	63	64	66	63	65	67	68	74	81	87	94
<b>30</b>	49	51	57	60	61	62	63	63	63	64	62	63	66	68	70	76	82	88	94
<b>31</b>	47	50	57	60	60	62	63	64	64	62	63	65	67	70	71	77	83	88	94
<b>32</b>	46	50	57	60	62	63	64	64	62	63	65	66	68	71	72	78	83	89	94
<b>33</b>	45	49	56	60	62	63	64	62	63	65	66	68	71	73	74	79	84	90	95
<b>34</b>	43	48	56	62	63	64	62	62	65	66	67	70	72	74	74	79	84	90	95
<b>35</b>	41	47	56	62	63	61	62	63	66	67	68	70	72	74	75	80	85	90	95
<b>36</b>	40	47	56	62	59	61	62	63	66	67	68	70	72	74	75	80	85	90	95
<b>37</b>	38	45	56	58	59	61	62	63	66	67	67	69	71	73	74	79	84	90	95
<b>38</b>	38	45	53	58	61	62	63	65	65	67	68	70	72	74	73	78	84	89	95
<b>39</b>	37	41	53	58	61	62	63	64	65	67	68	70	71	73	73	78	84	89	95
<b>40</b>	34	41	53	58	61	62	63	64	64	66	67	69	71	73	72	78	83	89	94

## Male, Non-Smoker

## Issue

Age	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
<b>41</b>	34	41	53	58	61	61	62	62	63	65	65	67	69	71	71	77	83	88	94	100
<b>42</b>	34	43	53	58	60	61	62	61	61	63	64	66	67	69	71	77	83	88	94	100
<b>43</b>	32	43	53	58	60	61	60	60	60	60	62	64	66	68	69	75	81	88	94	100
<b>44</b>	32	44	52	57	59	60	60	59	59	58	60	62	65	67	69	75	81	88	94	100
<b>45</b>	32	44	52	57	59	60	59	57	57	57	59	61	63	66	68	74	81	87	94	100
<b>46</b>	32	42	50	54	56	57	57	56	55	56	59	61	63	65	67	74	80	87	93	100
<b>47</b>	30	40	48	52	54	55	55	54	54	55	59	61	62	63	66	73	80	86	93	100
<b>48</b>	30	40	46	49	51	52	53	53	54	55	57	61	62	63	63	70	78	85	93	100
<b>49</b>	29	39	43	48	50	51	50	51	53	54	57	61	61	62	62	70	77	85	92	100
<b>50</b>	29	37	42	45	47	48	49	50	51	54	57	61	61	61	61	69	77	84	92	100
<b>51</b>	27	35	40	43	45	47	48	50	51	53	57	60	61	61	62	70	77	85	92	100
<b>52</b>	27	34	39	42	44	45	48	49	50	53	56	60	60	62	62	70	77	85	100	100
<b>53</b>	25	31	37	41	44	45	47	49	50	51	56	59	61	61	62	70	77	100	100	100
<b>54</b>	25	30	36	39	43	44	47	48	49	51	55	59	59	61	62	70	100	100	100	100
<b>55</b>	24	29	35	38	42	43	45	48	49	50	56	58	59	61	62	100	100	100	100	100
<b>56</b>	23	29	35	38	42	42	44	47	48	50	55	57	58	59	100	100	100	100	100	100
<b>57</b>	23	28	35	38	42	42	43	45	47	49	53	55	56	100	100	100	100	100	100	100
<b>58</b>	22	28	33	37	41	41	43	45	45	47	51	53	100	100	100	100	100	100	100	100
<b>59</b>	22	26	33	37	41	41	42	44	44	46	50	100	100	100	100	100	100	100	100	100
<b>60</b>	20	26	33	37	41	40	41	42	42	45	100	100	100	100	100	100	100	100	100	100
<b>61</b>	20	26	33	37	41	40	41	42	42	75	100	100	100	100	100	100	100	100	100	100
<b>62</b>	19	25	32	38	40	40	41	42	75	75	100	100	100	100	100	100	100	100	100	100
<b>63</b>	19	25	33	36	40	40	41	75	75	75	100	100	100	100	100	100	100	100	100	100
<b>64</b>	18	24	32	36	39	40	75	75	75	75	100	100	100	100	100	100	100	100	100	100
<b>65</b>	18	24	32	36	39	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
<b>66</b>	18	24	32	36	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
<b>67</b>	18	24	32	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
<b>68</b>	18	24	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
<b>69</b>	18	52	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
<b>70</b>	48	52	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100

1

**Male, Non-Smoker**

**Issue**

**Duration**

Age	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
71	48	52	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
72	48	52	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
73	48	52	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
74	48	52	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
75	48	52	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
76	48	52	55	60	60	65	70	70	70	100	100	100	100	100	100	100	100	100	100	100
77	48	52	55	60	60	65	70	70	100	100	100	100	100	100	100	100	100	100	100	100
78	48	52	55	60	60	65	70	100	100	100	100	100	100	100	100	100	100	100	100	100
79	48	52	55	60	60	65	100	100	100	100	100	100	100	100	100	100	100	100	100	100
80	48	52	55	60	60	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
81	48	52	55	60	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
82	48	52	55	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
83	48	52	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
84	48	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
85+	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

2

**Male, Smoker****Issue****Duration**

<b>Age</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20+</b>
<b>0-15</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>16</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>17</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>18</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>19</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>20</b>	98	100	100	100	100	100	100	99	99	99	100	99	99	99	100	100	100	100	100	100
<b>21</b>	95	98	99	100	95	96	96	95	96	97	97	96	96	96	96	97	98	98	99	100
<b>22</b>	92	95	96	90	90	93	93	92	93	95	95	93	93	92	93	94	96	97	99	100
<b>23</b>	90	92	85	88	88	89	89	89	90	90	90	90	89	90	92	94	95	97	98	100
<b>24</b>	87	81	82	85	84	86	88	86	86	88	88	86	86	88	89	91	93	96	98	100
<b>25</b>	77	78	79	82	81	83	83	82	83	85	84	84	84	85	86	89	92	94	97	100
<b>26</b>	75	77	79	82	82	83	83	82	83	84	84	84	84	85	81	85	89	92	96	100
<b>27</b>	73	75	78	82	82	83	83	82	82	82	82	84	84	80	81	85	89	92	96	100
<b>28</b>	71	73	79	82	81	82	83	81	81	82	82	82	80	80	81	85	89	92	96	100
<b>29</b>	69	72	78	81	81	82	82	81	81	81	81	77	80	80	81	85	89	92	96	100
<b>30</b>	68	71	78	81	81	81	82	81	81	81	76	77	80	80	81	85	89	92	96	100
<b>31</b>	65	70	77	81	79	81	82	81	81	76	77	79	81	81	83	86	90	93	97	100
<b>32</b>	63	67	77	78	79	81	81	81	76	77	77	80	83	83	85	88	91	94	97	100
<b>33</b>	60	65	74	78	79	79	81	76	77	77	79	80	83	85	85	88	91	94	97	100
<b>34</b>	57	62	74	77	79	79	75	76	77	79	79	81	83	85	87	90	92	95	97	100
<b>35</b>	53	60	73	77	79	75	75	76	77	79	80	82	84	86	88	90	93	95	98	100
<b>36</b>	52	59	71	75	74	75	75	76	77	79	79	81	83	85	87	90	92	95	97	100
<b>37</b>	49	58	70	71	74	74	75	76	77	78	79	81	84	86	86	89	92	94	97	100
<b>38</b>	48	55	66	70	72	74	74	75	76	78	79	81	83	85	87	90	92	95	97	100
<b>39</b>	45	50	65	70	72	72	74	74	75	77	79	81	84	86	86	89	92	94	97	100
<b>40</b>	41	49	63	68	71	72	73	74	74	76	78	80	83	85	86	89	92	94	97	100

**Male, Smoker****Issue**

<b>Age</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20+</b>
<b>41</b>	40	49	63	68	71	72	72	72	73	75	76	78	81	84	85	88	91	94	97	100
<b>42</b>	40	49	62	68	70	71	71	71	71	73	75	76	81	83	85	88	91	94	97	100
<b>43</b>	39	50	62	67	69	69	70	70	70	71	73	76	79	83	85	88	91	94	97	100
<b>44</b>	39	50	60	66	68	69	68	69	69	69	71	74	79	81	85	88	91	94	97	100
<b>45</b>	37	50	60	66	68	68	68	67	67	67	69	73	78	81	85	88	91	94	97	100
<b>46</b>	37	48	58	63	65	67	66	66	66	67	71	74	78	81	84	87	90	94	97	100
<b>47</b>	36	47	55	61	63	64	64	64	65	67	71	75	79	81	84	87	90	94	97	100
<b>48</b>	35	46	53	58	60	62	63	63	65	67	72	75	79	81	83	86	90	93	97	100
<b>49</b>	34	45	51	56	58	59	61	62	63	67	72	77	80	81	83	86	90	93	97	100
<b>50</b>	34	43	49	53	55	57	60	61	63	67	73	78	80	81	81	85	89	92	96	100
<b>51</b>	32	42	47	52	55	57	60	61	63	67	73	78	80	83	84	87	90	94	97	100
<b>52</b>	32	40	46	50	54	56	60	61	63	67	73	78	81	84	85	88	91	94	100	100
<b>53</b>	30	37	44	49	54	56	59	61	65	67	74	79	83	85	87	90	92	100	100	100
<b>54</b>	30	36	43	48	53	55	59	61	65	67	74	80	84	85	89	91	100	100	100	100
<b>55</b>	29	35	42	47	53	55	59	61	65	67	75	80	84	86	90	100	100	100	100	100
<b>56</b>	28	35	42	47	53	55	57	60	63	68	74	79	83	85	100	100	100	100	100	100
<b>57</b>	28	35	42	47	53	54	57	60	64	67	74	78	81	100	100	100	100	100	100	100
<b>58</b>	26	33	43	48	54	54	56	59	63	67	73	78	100	100	100	100	100	100	100	100
<b>59</b>	26	33	43	48	54	53	57	59	63	66	73	100	100	100	100	100	100	100	100	100
<b>60</b>	25	33	43	48	54	53	56	58	62	66	100	100	100	100	100	100	100	100	100	100
<b>61</b>	25	33	43	49	55	55	57	59	63	75	100	100	100	100	100	100	100	100	100	100
<b>62</b>	25	33	43	50	56	56	58	61	75	75	100	100	100	100	100	100	100	100	100	100
<b>63</b>	24	33	45	51	56	56	59	75	75	75	100	100	100	100	100	100	100	100	100	100
<b>64</b>	24	34	45	51	57	57	75	75	75	75	100	100	100	100	100	100	100	100	100	100
<b>65</b>	24	34	45	52	57	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
<b>66</b>	24	35	45	53	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
<b>67</b>	25	35	45	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
<b>68</b>	25	36	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
<b>69</b>	27	52	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
<b>70</b>	48	52	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100

Issue	Male, Smoker																			
	Duration																			
Age	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
71	48	52	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
72	48	52	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
73	48	52	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
74	48	52	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
75	48	52	55	60	60	65	70	70	70	70	100	100	100	100	100	100	100	100	100	100
76	48	52	55	60	60	65	70	70	70	100	100	100	100	100	100	100	100	100	100	100
77	48	52	55	60	60	65	70	70	100	100	100	100	100	100	100	100	100	100	100	100
78	48	52	55	60	60	65	70	100	100	100	100	100	100	100	100	100	100	100	100	100
79	48	52	55	60	60	65	100	100	100	100	100	100	100	100	100	100	100	100	100	100
80	48	52	55	60	60	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
81	48	52	55	60	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
82	48	52	55	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
83	48	52	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
84	48	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
85+	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

1

## Female, Aggregate

## Issue

## Duration

Age	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
<b>0-15</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
<b>16</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
<b>17</b>	99	100	100	100	100	100	100	100	93	95	96	97	97	100	100	100	100	100	100	
<b>18</b>	83	83	84	84	84	84	86	78	78	79	82	84	85	88	88	90	93	95	98	100
<b>19</b>	65	66	68	68	68	68	63	63	64	66	69	71	72	74	75	80	85	90	95	100
<b>20</b>	48	50	51	51	51	47	48	48	49	51	56	57	58	61	63	70	78	85	93	100
<b>21</b>	47	48	50	51	47	47	48	49	51	53	57	60	61	64	64	71	78	86	93	100
<b>22</b>	44	47	48	45	47	47	48	49	53	54	60	61	63	64	66	73	80	86	93	100
<b>23</b>	42	45	44	45	47	47	49	51	53	54	61	64	64	67	69	75	81	88	94	100
<b>24</b>	39	40	42	44	47	47	50	51	54	56	64	64	66	69	70	76	82	88	94	100
<b>25</b>	34	38	41	44	47	47	50	53	56	57	64	67	69	71	73	78	84	89	95	100
<b>26</b>	34	38	41	45	49	49	51	56	58	59	66	69	70	73	70	76	82	88	94	100
<b>27</b>	34	38	41	47	50	51	54	57	59	60	69	70	73	70	71	77	83	88	94	100
<b>28</b>	34	37	43	47	53	53	56	59	62	63	70	73	70	72	74	79	84	90	95	100
<b>29</b>	34	38	43	49	54	56	58	60	63	64	73	70	72	74	75	80	85	90	95	100
<b>30</b>	35	38	43	50	56	56	59	63	66	67	70	71	74	75	76	81	86	90	95	100
<b>31</b>	35	38	43	51	56	58	60	64	67	65	71	72	74	75	76	81	86	90	95	100
<b>32</b>	35	39	45	51	56	59	63	66	65	66	72	72	75	76	76	81	86	90	95	100
<b>33</b>	36	39	44	52	58	62	64	65	66	67	72	74	75	76	76	81	86	90	95	100
<b>34</b>	36	40	45	52	58	63	63	66	67	68	74	74	76	76	76	81	86	90	95	100
<b>35</b>	36	40	45	53	59	61	65	67	68	70	75	74	75	76	75	80	85	90	95	100
<b>36</b>	36	40	45	53	55	62	65	67	68	70	74	74	74	75	75	80	85	90	95	100
<b>37</b>	36	41	47	52	57	62	65	67	68	69	72	72	73	75	74	79	84	90	95	100
<b>38</b>	34	41	44	52	57	63	66	68	69	70	72	71	72	74	75	80	85	90	95	100
<b>39</b>	34	40	45	53	58	63	66	68	69	69	70	70	70	73	74	79	84	90	95	100
<b>40</b>	32	40	45	53	58	65	65	67	68	69	70	69	70	73	73	78	84	89	95	100

## Female, Aggregate

## Issue

## Duration

Age	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
<b>41</b>	32	40	45	53	57	63	64	67	68	68	69	69	69	73	74	79	84	90	95	100
<b>42</b>	32	40	45	52	56	61	63	65	66	68	69	68	70	74	75	80	85	90	95	100
<b>43</b>	31	39	45	51	55	59	61	65	65	66	68	69	69	74	77	82	86	91	95	100
<b>44</b>	31	39	45	50	54	58	61	63	64	66	67	68	71	75	78	82	87	91	96	100
<b>45</b>	31	38	44	49	53	56	59	62	63	65	67	68	71	77	79	83	87	92	96	100
<b>46</b>	29	37	43	48	51	54	59	62	63	65	67	69	71	77	78	82	87	91	96	100
<b>47</b>	28	35	41	46	49	54	57	61	62	66	68	69	71	77	77	82	86	91	95	100
<b>48</b>	28	35	41	44	49	52	57	61	63	66	68	71	72	75	77	82	86	91	95	100
<b>49</b>	26	34	39	43	47	52	55	61	63	67	69	71	72	75	75	80	85	90	95	100
<b>50</b>	25	32	38	41	46	50	55	61	63	67	69	72	72	75	74	79	84	90	95	100
<b>51</b>	25	32	38	41	45	50	55	61	63	66	68	69	71	74	74	79	84	90	95	100
<b>52</b>	23	30	36	41	45	51	56	61	62	65	66	68	68	73	73	78	84	89	100	100
<b>53</b>	23	30	36	41	47	51	56	61	62	63	65	66	68	72	72	78	83	100	100	100
<b>54</b>	22	29	35	41	47	53	57	61	61	62	62	66	66	69	70	76	100	100	100	100
<b>55</b>	22	29	35	41	47	53	57	61	61	61	62	63	64	68	69	100	100	100	100	100
<b>56</b>	22	29	35	41	45	51	56	59	60	61	62	63	64	67	100	100	100	100	100	100
<b>57</b>	22	29	35	41	45	50	54	56	58	59	61	62	63	100	100	100	100	100	100	100
<b>58</b>	22	30	36	41	44	49	53	56	57	57	61	62	100	100	100	100	100	100	100	100
<b>59</b>	22	30	36	41	44	48	51	53	55	56	59	100	100	100	100	100	100	100	100	100
<b>60</b>	22	30	36	41	43	47	50	51	53	55	100	100	100	100	100	100	100	100	100	100
<b>61</b>	22	29	35	39	42	46	49	50	52	80	100	100	100	100	100	100	100	100	100	100
<b>62</b>	20	28	33	39	41	45	47	49	80	80	100	100	100	100	100	100	100	100	100	100
<b>63</b>	20	28	33	38	41	44	46	80	80	80	100	100	100	100	100	100	100	100	100	100
<b>64</b>	19	27	32	36	40	42	80	80	80	80	100	100	100	100	100	100	100	100	100	100
<b>65</b>	19	25	30	35	39	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>66</b>	19	25	30	35	72	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>67</b>	19	25	30	72	72	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>68</b>	19	25	68	72	72	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>69</b>	19	64	68	72	72	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>70</b>	60	60	64	68	68	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100

1

**Female, Aggregate**

**Issue**

<b>Age</b>	<b>Duration</b>																			
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20+</b>
<b>71</b>	60	60	64	68	68	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>72</b>	60	60	64	68	68	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>73</b>	60	60	64	68	68	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>74</b>	60	60	64	68	68	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>75</b>	60	60	64	68	68	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>76</b>	60	60	64	68	68	72	75	75	80	100	100	100	100	100	100	100	100	100	100	100
<b>77</b>	60	60	64	68	68	72	75	75	100	100	100	100	100	100	100	100	100	100	100	100
<b>78</b>	60	60	64	68	68	72	75	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>79</b>	60	60	64	68	68	72	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>80</b>	60	60	64	68	68	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>81</b>	60	60	64	68	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>82</b>	60	60	64	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>83</b>	60	60	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>84</b>	60	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>85+</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

2

## Female, Non-Smoker

## Issue

## Duration

Age	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
<b>0-15</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
<b>16</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
<b>17</b>	96	98	98	98	98	99	99	99	92	92	93	95	95	97	99	99	99	100	100	
<b>18</b>	78	80	80	80	80	81	81	74	75	75	78	79	82	83	85	88	91	94	97	
<b>19</b>	60	62	63	63	63	65	59	59	60	60	64	67	67	70	72	78	83	89	94	
<b>20</b>	42	44	45	45	45	42	42	42	45	45	50	51	53	56	58	66	75	83	92	100
<b>21</b>	41	42	44	45	41	42	42	44	47	47	51	53	54	57	59	67	75	84	92	100
<b>22</b>	39	41	44	41	41	42	44	45	49	49	54	56	57	58	60	68	76	84	92	100
<b>23</b>	38	41	38	40	41	42	44	46	49	50	56	57	58	60	62	70	77	85	92	100
<b>24</b>	36	36	38	40	41	42	46	47	50	51	58	59	60	62	63	70	78	85	93	100
<b>25</b>	32	34	37	40	41	43	46	49	51	53	59	60	62	63	64	71	78	86	93	100
<b>26</b>	32	34	37	41	43	45	47	50	53	53	60	62	63	64	62	70	77	85	92	100
<b>27</b>	32	34	38	43	46	47	49	51	53	55	62	63	64	62	62	70	77	85	92	100
<b>28</b>	30	34	39	43	47	49	51	53	56	58	63	63	61	62	63	70	78	85	93	100
<b>29</b>	30	35	40	45	50	51	52	55	58	59	64	61	62	63	63	70	78	85	93	100
<b>30</b>	31	35	40	46	51	52	53	56	59	60	62	62	63	65	65	72	79	86	93	100
<b>31</b>	31	35	40	46	51	53	55	58	60	58	62	62	63	65	65	72	79	86	93	100
<b>32</b>	32	35	40	45	51	53	56	59	57	58	62	63	63	65	64	71	78	86	93	100
<b>33</b>	32	36	41	47	52	55	58	55	58	59	63	63	65	65	65	72	79	86	93	100
<b>34</b>	33	36	41	47	52	55	55	57	58	59	63	65	64	65	64	71	78	86	93	100
<b>35</b>	33	36	41	47	52	53	57	58	59	61	63	64	64	64	71	78	86	93	100	
<b>36</b>	33	36	41	47	49	53	57	58	59	61	63	64	63	64	63	70	78	85	93	100
<b>37</b>	32	36	41	44	49	53	57	58	59	60	62	62	61	62	63	70	78	85	93	100
<b>38</b>	32	37	39	45	50	54	57	58	60	60	61	61	61	62	61	69	77	84	92	100
<b>39</b>	30	35	39	45	50	54	57	58	60	59	60	60	59	60	61	69	77	84	92	100
<b>40</b>	28	35	39	45	50	54	56	57	59	59	60	59	59	59	60	68	76	84	92	100

## Female, Non-Smoker

## Issue

## Duration

Age	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
<b>41</b>	28	35	39	45	49	52	55	55	58	57	58	59	58	59	60	68	76	84	92	100
<b>42</b>	27	35	39	44	49	52	54	55	56	57	57	57	58	60	61	69	77	84	92	100
<b>43</b>	27	34	39	44	47	50	53	53	55	55	56	57	56	60	61	69	77	84	92	100
<b>44</b>	26	34	38	42	47	50	52	53	54	55	55	55	56	61	62	70	77	85	92	100
<b>45</b>	26	33	38	42	45	48	51	51	52	53	54	55	56	61	62	70	77	85	92	100
<b>46</b>	24	32	37	40	43	47	49	51	52	53	54	55	56	60	61	69	77	84	92	100
<b>47</b>	24	30	35	39	42	45	47	49	51	53	54	55	56	59	60	68	76	84	92	100
<b>48</b>	23	30	35	37	40	44	47	49	50	53	54	55	55	59	57	66	74	83	91	100
<b>49</b>	23	29	33	35	39	42	45	48	50	53	54	55	55	57	56	65	74	82	91	100
<b>50</b>	21	27	32	34	37	41	44	48	50	53	54	55	55	56	55	64	73	82	91	100
<b>51</b>	21	26	30	34	37	41	44	48	49	51	53	53	54	55	55	64	73	82	91	100
<b>52</b>	20	25	30	33	37	41	44	47	48	50	50	51	51	55	53	62	72	81	100	100
<b>53</b>	19	24	29	32	37	41	43	47	48	48	49	49	51	52	52	62	71	100	100	100
<b>54</b>	18	24	29	32	37	41	43	45	47	47	47	49	49	51	51	61	100	100	100	100
<b>55</b>	18	23	28	32	37	41	43	45	45	45	46	46	47	50	50	100	100	100	100	100
<b>56</b>	18	23	28	32	36	39	42	44	44	45	46	46	46	49	100	100	100	100	100	100
<b>57</b>	18	23	28	31	35	38	41	42	44	44	45	45	46	100	100	100	100	100	100	100
<b>58</b>	17	23	26	31	35	36	38	41	41	42	45	45	100	100	100	100	100	100	100	100
<b>59</b>	17	23	26	30	33	35	38	39	40	41	44	100	100	100	100	100	100	100	100	100
<b>60</b>	17	23	26	30	32	34	36	38	39	40	100	100	100	100	100	100	100	100	100	100
<b>61</b>	17	22	25	29	32	33	35	36	38	80	100	100	100	100	100	100	100	100	100	100
<b>62</b>	16	22	25	28	30	32	34	35	80	80	100	100	100	100	100	100	100	100	100	100
<b>63</b>	16	20	24	28	30	32	34	80	80	80	100	100	100	100	100	100	100	100	100	100
<b>64</b>	14	21	24	27	29	30	80	80	80	80	100	100	100	100	100	100	100	100	100	100
<b>65</b>	15	19	23	25	28	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>66</b>	15	19	23	25	72	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>67</b>	15	19	22	72	72	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>68</b>	13	18	68	72	72	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>69</b>	13	64	68	72	72	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>70</b>	60	60	64	68	68	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100

1

**Female, Non-Smoker**

**Issue**

**Duration**

Age	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
<b>71</b>	60	60	64	68	68	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>72</b>	60	60	64	68	68	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>73</b>	60	60	64	68	68	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>74</b>	60	60	64	68	68	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>75</b>	60	60	64	68	68	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>76</b>	60	60	64	68	68	72	75	75	80	100	100	100	100	100	100	100	100	100	100	100
<b>77</b>	60	60	64	68	68	72	75	75	100	100	100	100	100	100	100	100	100	100	100	100
<b>78</b>	60	60	64	68	68	72	75	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>79</b>	60	60	64	68	68	72	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>80</b>	60	60	64	68	68	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>81</b>	60	60	64	68	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>82</b>	60	60	64	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>83</b>	60	60	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>84</b>	60	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>85+</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

2

**Female, Smoker****Issue****Duration**

<b>Age</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20+</b>
<b>0-15</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>16</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>17</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
<b>18</b>	99	100	100	100	100	100	100	95	96	97	100	100	100	100	100	100	100	100	100	100
<b>19</b>	87	89	92	92	92	92	84	84	86	86	92	93	95	96	99	99	100	100	100	100
<b>20</b>	74	77	80	80	80	73	73	73	75	77	83	83	86	88	90	92	94	96	98	100
<b>21</b>	71	74	78	78	71	71	73	74	77	79	85	86	88	89	90	92	94	96	98	100
<b>22</b>	68	71	75	70	71	71	73	74	78	79	88	90	89	89	92	94	95	97	98	100
<b>23</b>	65	69	67	70	70	70	73	77	79	81	89	90	90	92	92	94	95	97	98	100
<b>24</b>	62	60	64	69	70	70	74	77	79	81	92	90	92	93	93	94	96	97	99	100
<b>25</b>	53	58	63	67	69	70	74	78	81	82	92	93	93	95	95	96	97	98	99	100
<b>26</b>	53	58	63	69	71	72	75	79	82	82	93	93	95	96	90	92	94	96	98	100
<b>27</b>	52	56	63	70	74	74	78	81	82	84	93	95	95	90	90	92	94	96	98	100
<b>28</b>	52	56	64	71	75	77	79	82	85	86	95	95	90	92	92	94	95	97	98	100
<b>29</b>	51	56	64	71	78	78	81	84	86	88	95	90	90	92	92	94	95	97	98	100
<b>30</b>	51	56	64	72	79	79	82	85	88	89	90	90	92	93	93	94	96	97	99	100
<b>31</b>	51	56	64	72	78	81	84	84	88	84	90	90	92	93	93	94	96	97	99	100
<b>32</b>	51	56	64	71	78	81	85	86	84	85	90	90	92	94	93	94	96	97	99	100
<b>33</b>	51	57	62	71	78	82	85	83	84	85	90	92	93	93	93	94	96	97	99	100
<b>34</b>	51	56	62	71	78	82	81	83	85	86	90	92	92	94	93	94	96	97	99	100
<b>35</b>	51	56	62	71	78	79	83	84	85	86	90	91	91	93	93	94	96	97	99	100
<b>36</b>	49	56	62	71	74	79	83	84	85	86	90	90	91	93	92	94	95	97	98	100
<b>37</b>	48	55	62	67	74	79	83	84	85	86	89	90	89	92	91	93	95	96	98	100
<b>38</b>	47	55	57	66	72	77	81	84	86	86	87	88	88	90	91	93	95	96	98	100
<b>39</b>	45	50	57	66	72	77	81	83	85	86	86	87	86	89	90	92	94	96	98	100
<b>40</b>	41	50	57	66	72	77	81	83	84	85	86	86	86	89	89	91	93	96	98	100

**Female, Smoker****Issue****Duration**

<b>Age</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20+</b>
<b>41</b>	40	50	57	65	71	76	79	81	83	84	85	86	85	89	90	92	94	96	98	100
<b>42</b>	40	49	57	65	69	74	77	80	82	83	84	85	86	90	92	94	95	97	98	100
<b>43</b>	39	49	55	63	69	73	76	78	80	82	83	84	85	92	93	94	96	97	99	100
<b>44</b>	39	48	55	62	67	71	75	78	80	80	82	84	86	93	96	97	98	98	99	100
<b>45</b>	37	47	55	61	65	70	73	76	78	80	81	84	86	94	97	98	98	99	99	100
<b>46</b>	36	46	53	59	63	68	71	75	77	79	83	85	86	93	96	97	98	98	99	100
<b>47</b>	34	44	51	57	62	66	70	75	77	80	83	85	86	93	94	95	96	98	99	100
<b>48</b>	34	44	50	54	60	64	69	74	77	80	84	86	87	92	92	94	95	97	98	100
<b>49</b>	33	42	48	53	58	63	68	74	77	81	84	86	87	92	91	93	95	96	98	100
<b>50</b>	31	41	46	51	57	61	67	74	77	81	85	87	87	91	90	92	94	96	98	100
<b>51</b>	30	39	45	51	56	61	67	74	75	80	83	85	85	90	90	92	94	96	98	100
<b>52</b>	29	38	45	50	56	62	68	74	75	79	81	83	84	90	90	92	94	96	100	100
<b>53</b>	28	37	43	49	57	62	68	73	74	77	79	81	83	89	89	91	93	100	100	100
<b>54</b>	28	36	43	49	57	63	69	73	74	75	78	80	81	87	89	91	100	100	100	100
<b>55</b>	26	35	42	49	57	63	69	73	73	74	76	78	79	86	87	100	100	100	100	100
<b>56</b>	26	35	42	49	56	62	67	71	72	74	76	78	79	85	100	100	100	100	100	100
<b>57</b>	26	35	42	49	55	61	66	69	72	73	76	78	79	100	100	100	100	100	100	100
<b>58</b>	28	36	43	49	55	59	63	68	69	72	76	78	100	100	100	100	100	100	100	100
<b>59</b>	28	36	43	49	54	57	63	67	68	70	76	100	100	100	100	100	100	100	100	100
<b>60</b>	28	36	43	49	53	57	61	64	67	69	100	100	100	100	100	100	100	100	100	100
<b>61</b>	26	35	42	48	52	56	59	63	66	80	100	100	100	100	100	100	100	100	100	100
<b>62</b>	26	33	41	47	51	55	58	62	80	80	100	100	100	100	100	100	100	100	100	100
<b>63</b>	25	33	41	46	51	55	57	80	80	80	100	100	100	100	100	100	100	100	100	100
<b>64</b>	25	33	40	45	50	53	80	80	80	80	100	100	100	100	100	100	100	100	100	100
<b>65</b>	24	32	39	44	49	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>66</b>	24	32	39	44	72	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>67</b>	24	32	39	72	72	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>68</b>	24	32	68	72	72	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>69</b>	24	64	68	72	72	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
<b>70</b>	60	60	64	68	68	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100

1

**Female, Smoker**

**Issue**

**Duration**

Age	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
71	60	60	64	68	68	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
72	60	60	64	68	68	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
73	60	60	64	68	68	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
74	60	60	64	68	68	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
75	60	60	64	68	68	72	75	75	80	80	100	100	100	100	100	100	100	100	100	100
76	60	60	64	68	68	72	75	75	80	100	100	100	100	100	100	100	100	100	100	100
77	60	60	64	68	68	72	75	75	100	100	100	100	100	100	100	100	100	100	100	100
78	60	60	64	68	68	72	75	100	100	100	100	100	100	100	100	100	100	100	100	100
79	60	60	64	68	68	72	100	100	100	100	100	100	100	100	100	100	100	100	100	100
80	60	60	64	68	68	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
81	60	60	64	68	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
82	60	60	64	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
83	60	60	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
84	60	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
85+	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

2

3

4